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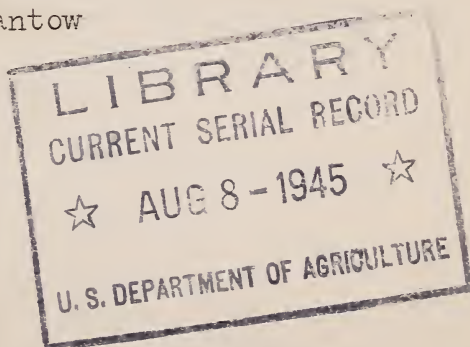
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UNITED STATES DEPARTMENT OF AGRICULTURE
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HEALTH AND VIGOR
COMPETITION AND PRODUCTION

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HEALTH AND VIGOR—COMPETITION AND PRODUCTION

Health and vigor, competition and production—there is most assuredly a relationship there!

Just to be alive is important but to have abundant health is the pay-off. This is true whether we have in mind plants or animals. Certainly a healthy, vigorous plant or animal has the advantage when competing with an unhealthy one, and who would question which would give the greater production of forage, beef, mutton, or milk?

Our forage plants can live without livestock, but our livestock cannot live without forage plants. Of course, too often it is the case that the forage plants cannot live, or live only in a weakened condition, because of their treatment by livestock. Actually they both could be a great help to each other. If this could be, why not have it so? Well, I'll make an attempt to tell you. It's like this.

The care of a range demands a frequent diagnosis of what is "going on" on the range or pasture that is being used or is to be used. The "diagnosing" is a real undertaking. The good doctor is the good diagnostician. He sizes up the situation correctly, and if he doesn't know the treatment, he can look in the book to see what to do. The doctor and a range manager or operator both have the same problem, and that is to diagnose properly. This takes both knowledge and experience. There may be this difference—people

who do not feel well go to the doctor and tell their story; then the doctor's eyes and ears can go to work. The ranch operator must go to the range himself to discover what is wrong. There is none so blind as he who does not know how to see. To see the things that are happening on the range, sight alone is not enough. You must know how to read the story of the range after you see it. You can look at Chinese writing, but do you know how to read it? Our ranges are so much Chinese to many range advisers and operators..

Health and vigor were headlines in the beginning of this article as having an important part on the range. They determine plant competition and forage production.

Vigor in our forage plants is almost synonymous with health and, when looked upon in this way, vigor is the driving force which determines whether we have poor production or good production; whether our forage plants can compete favorably or unfavorably with less desirable plants or undesirable ones. Vigor certainly is the key to plant succession. If vigor is so important, how do we recognize it or what do we do to decrease or increase this state of vigor? A little elucidating on these points is in order. A few simple guides are given for the recognition of good vigor:

1. Large stem and leaf growth, speaking comparatively.
2. For the bunch-type grasses, a bunch-type growth at the base of the plant or tuft, with no undue crowding.
3. Good volume growth or good height in average or more favorable rainfall years.

4. Early spring growth, if moisture is available.

5. A well-developed and deep root system.

It may be well at this point to inject a thought that plants in a state of high vigor may die, or a portion of the tuft may die, from a lack of moisture. If a portion of a tuft dies, due to the lack of moisture, but the plant has not been penalized by use, it is quite likely that when there again is enough moisture and a suitable temperature prevails, the plant will grow quite luxuriantly, indicating that it never lost its vigor. Such plants have food stored in the portion of the crown or roots that remains alive and retain an adequate root system. If enough density is lost, however, other plants can invade. In some types, too great a density results from close grazing. Some bunch-type species will take on a sod-forming aspect after too close use. When this occurs, vigor is lower than it should be.

There is a great deal of difference in results when the plant is low in vigor. In its response to rainfall or its recovery after a drought period, a weakened plant does not have an adequate root system and has little food stored. The plant starts to grow, but the low vitality does not allow it to produce the volume of the vigorous plant. The vigorous plant root system competes with the plants of its kind and with any other species that may be at hand. For some reason, our most desirable plants can dominate by and large over the less desirable forage plants, or even the undesirable forage plants—if the most desirable forage plants are not penalized by misuse, which lowers their vigor.

Let there be no mistake—in the main the

plants that we see here and there are there because we gave them a chance in one way or another. The whole story, then, is that the healthy vigorous plant is able to compete with other species and produce more than the less vigorous plant. The desirable grasses, if vigorous, handle plant succession very nicely by either preventive encroachment on, or the driving out of, the plants we do not want. It is hoped that you have been impressed with the desirability and necessity of vigor in forage plants. Vigor is a paying proposition—it is a desirable attainment.

Training of people in how to use tools in performing the operation for which they were designed is highly important. Too often, the tools become all-important, and the operation only secondary. On the range, both the novice and the experienced man need to put into effect only a few basic management practices **to get results**. Science reveals to us that vigor of plants is affected adversely by:

1. Too early use
2. Too frequent use
3. Too close use

If you want the best vigor and the highest plant production along with use, you must avoid all three of the above dangers. Don't fool yourself, you can't ignore them and bring in high production any more than you can bring in a radio station until you turn the dial to that station's sending frequency. Turn your own dial expertly on your pastures, keeping in mind the above-named points. It's better to get a right idea about plant growth than to have a perfect range management plan handed you.

Project your management of the range on feed you have and not upon what you think you may get. Then, there'll be less worry about "when it's gonna rain."

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